What is claimed is:

1. A method for removing photoresist from a substrate comprising:

disposing said substrate in a plasma processing system, said substrate having a dielectric layer formed thereon with said photoresist overlying said dielectric layer, wherein said photoresist provides a mask for etching a feature into said dielectric layer;

introducing a process gas comprising N_xO_y, wherein x and y are integers greater than or equal to unity;

forming a plasma from said process gas in said plasma processing system; and

removing said photoresist from said substrate with said plasma.

2. The method of claim 1, wherein said introducing of said process gas comprises introducing at least one of NO, NO_2, and N_2O.

3. The method of claim 1, wherein said introducing of said process gas further comprises introducing an inert gas.

4. The method of claim 3, wherein said introducing of said inert gas comprises introducing a Noble gas.

5. The method of claim 1, wherein said disposing of said substrate having said dielectric layer comprises disposing said substrate having a low dielectric constant dielectric layer.

6. The method of claim 1, wherein said disposing of said substrate having said dielectric layer comprises disposing said substrate having at least one of a porous dielectric layer, and a non-porous dielectric layer.

7. The method of claim 1, wherein said disposing of said substrate having said dielectric layer comprises disposing said substrate having said

dielectric layer including at least one of an organic material, and an inorganic material.

8. The method of claim 7, wherein said disposing of said substrate having said dielectric layer comprises disposing said substrate having said dielectric layer including an inorganic-organic hybrid material.

9. The method of claim 7, wherein said disposing of said substrate having said dielectric layer comprises disposing said substrate having said dielectric layer including an oxidized organo silane.

10. The method of claim 7, wherein said disposing of said substrate having said dielectric layer comprises disposing said substrate having said dielectric layer including at least one of hydrogen silsesquioxane, and methyl silsesquioxane.

11. The method of claim 7, wherein said disposing of said substrate having said dielectric layer comprises disposing said substrate having said dielectric layer including a silicate-based material.

12. The method of claim 9, wherein said disposing of said substrate having said dielectric layer comprises disposing said substrate having said dielectric layer including a collective film including silicon, carbon, and oxygen.

13. The method of claim 12, wherein said disposing of said substrate having said dielectric layer comprises disposing hydrogen in said collective film.

14. A method of forming a feature in a dielectric layer on a substrate comprising:

forming said dielectric layer on said substrate;

forming a photoresist pattern on said dielectric layer;

transferring said photoresist pattern to said dielectric layer by etching; and

removing said photoresist from said dielectric layer using a plasma formed with a process gas comprising N_xO_y, wherein x and y are integers greater than or equal to unity.

15. The method of claim 14, wherein said using of said process gas comprises using at least one of NO, NO_2, and N_2O.

16. The method of claim 14, wherein said using of said process gas further comprises using an inert gas.

17. The method as recited in claim 14, wherein said using of said inert gas comprises using a Noble gas.

18. The method as recited in claim 14, wherein said removing of said photoresist is performed for a first period of time.

19. The method as recited in claim 18, wherein said removing of said photoresist for said first period of time is determined by endpoint detection.

20. The method as recited in claim 19, wherein said determining said first period of time by endpoint detection comprises utilizing optical emission spectroscopy.

21. The method as recited in claim 18, wherein said removing of said photoresist for said first period of time is followed by exposing said photoresist to said N_xO_y based plasma for a second period of time.

22. The method as recited in claim 21, wherein said exposing for said second period of time comprises exposing said photoresist to said N_xO_y based plasma for a fraction of said first period of time.

23. The method as recited in claim 14, wherein said transferring of said photoresist pattern to said dielectric layer by etching is performed in a plasma processing system, and said removing of said photoresist from said dielectric layer is performed in said plasma processing system.

24. The method as recited in claim 14, wherein said transferring of said photoresist pattern to said dielectric layer by etching is performed in a plasma processing system, and said removing of said photoresist from said dielectric layer is performed in another plasma processing system.

25. A plasma processing system for removing photoresist from a substrate comprising:

a plasma processing chamber for facilitating the formation of a plasma from a process gas; and

a controller coupled to said plasma processing chamber and configured to execute a process recipe utilizing said process gas to form a plasma to remove said photoresist from said substrate, wherein said process gas comprises N_xO_y, and x and y are integers greater than or equal to unity.

26. The system as recited in claim 25, further comprising a diagnostic system coupled to said plasma processing chamber, and coupled to said controller.

27. The system as recited in claim 26, wherein said diagnostic system is configured to receive a signal that is related to light emitted from said plasma.

28. The system as recited in claim 25, wherein said process gas comprises at least one of NO, NO_2, and N_2O.

29. The system as recited in claim 25, wherein said process gas further comprises an inert gas.

30. The system as recited in claim 25, wherein said inert gas comprises a Noble gas.

31. The system as recited in claim 26, wherein said controller causes said photoresist to be exposed to said plasma for a period of time.

32. The system as recited in claim 31, wherein said period of time is determined by endpoint detection determined by said diagnostic system.

33. The system as recited in claim 26, wherein said diagnostic system comprises an optical emission spectroscopy device.